

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-2. (Canceled)

3. (Currently Amended) A method of identifying an agent ~~suitable~~ for altering mitochondrial function in a chondrocyte, comprising:

comparing the rate of mitochondrial ATP synthesis in one or more biological samples obtained from a subject in the presence and absence of a candidate agent, wherein the biological sample comprises a chondrocyte, and wherein an altered rate of mitochondrial ATP synthesis indicates that the agent alters mitochondrial function; and therefrom ~~determining the suitability of~~ identifying said ~~candidate~~ agent for altering mitochondrial function in a chondrocyte.

4. (Currently Amended) A method of determining the suitability of an agent for altering mitochondrial function in a chondrocyte, comprising:

comparing the rate of mitochondrial ATP synthesis in a biological sample obtained from a subject before and after administering to said subject a candidate agent, wherein the biological sample comprises a chondrocyte, and wherein an altered rate of mitochondrial ATP synthesis indicates that the agent alters mitochondrial function; and therefrom determining the suitability of said candidate agent for altering mitochondrial function in a chondrocyte.

5-11. (Canceled)

12. (Previously Presented) The method of any one of claims 3 or 4 wherein the chondrocyte is an articular chondrocyte.

13-14. (Canceled)

15. (Previously Presented) The method of any one of claims 3 or 4 wherein the biological sample comprises an articular chondrocyte and the step of comparing comprises comparing the rate of ATP synthesis in the absence and presence of transforming growth factor-beta.

16-112. (Canceled)

113. (New) A method of identifying an agent suitable for altering mitochondrial function in a chondrocyte, comprising:

comparing, in the absence and presence of transforming growth factor-beta, the rate of ATP synthesis in one or more biological samples obtained from a subject in the presence and absence of a candidate agent, wherein the biological sample comprises an articular chondrocyte, and wherein an altered rate of ATP synthesis indicates that the agent alters mitochondrial function; and therefrom determining the suitability of said candidate agent for altering mitochondrial function in a chondrocyte.

114. (New) A method of determining the suitability of an agent for altering mitochondrial function in a chondrocyte, comprising:

comparing, in the absence and presence of transforming growth factor-beta, the rate of ATP synthesis in a biological sample obtained from a subject before and after administering to said subject a candidate agent, wherein the biological sample comprises an articular chondrocyte, and wherein an altered rate of ATP synthesis indicates that the agent alters mitochondrial function; and therefrom determining the suitability of said candidate agent for altering mitochondrial function in a chondrocyte.